

Steel that moves the earth

Wear Resistant Plates

 **ROCKSTAR 500**



Product Description

Rockstar 500 is a wear resistant quenched and tempered steel plate having an excellent combination of hardness, formability and weldability to meet fabrication requirements.

Product Application

Rockstar 500 is used for application where the components are subjected to wear. It is a popular abrasion-resistant product for mining and other highly abrasive industrial applications.

Dimensions

| Thickness | Width |
|--------------------|---|
| 6 – 50 mm | Up to 3500mm; higher width and thickness can be provided on a case to case basis |
| Delivery Condition | Quenched/Quenched and tempered. The plates are delivered with sheared or thermally cut edges. Untrimmed edges can also be delivered after agreement. Plates can be delivered in shot blasted and primer coated surface condition. |

Chemical Composition (Ladle Analysis)

| Plate Thickness mm | C Max % | Mn Max % | P Max % | S Max % | Si Max % | Cr Max % | Ni Max % | Mo Max % | B Max % | CE Max | PCM Max |
|-----------------------|------------|-------------|------------|------------|-------------|-------------|-------------|-------------|------------|-----------|------------|
| 6.0 – 20.0 | | | | | | | | | | 0.60 | 0.41 |
| 21.0 – 40.0 | 0.30 | 1.60 | 0.025 | 0.010 | 0.70 | 1.50 | 1.50 | 0.70 | 0.0040 | 0.65 | 0.43 |
| 41.0 – 50.0 | | | | | | | | | | 0.74 | 0.48 |

Elements in wt%

$$CE = C + \frac{Mn}{6} + \frac{(Cr + Mo + V)}{5} + \frac{(Cu + Ni)}{15}$$

$$PCM = C + \frac{Si}{30} + \frac{(Mn + Cu + Cr)}{20} + \frac{Ni}{60} + \frac{Mo}{15} + \frac{V}{10} + 5 \times B$$

Mechanical Properties

| Hardness | 450-540 BHN (On a milled surface 0.5-2 mm below the plate surface) | | | |
|---|--|------------------------|---|-------------------------------|
| | Yield Strength (MPa) | Tensile Strength (MPa) | % Elongation (L ₀ =50 mm) | Impact at 20°C (In Joules) |
| Typical values for 15 mm plate thickness | 1250 | 1500 | 8 | 27 |

Orientation of tensile specimen is Transverse and Impact is longitudinal to rolling direction

Tolerances

| | |
|---------------------------|---|
| Thickness | Thickness tolerance as per EN 10029. Narrower tolerances can also be offered. |
| Length and Width | Tolerances as per the requirements of EN 10029 |
| Flatness | Tolerances as per the requirements of EN 10029 Class N |
| Surface Properties | Tolerances as per the requirements of EN 10163-2, Class A Subclass 1 |

Heat Treatment and Fabrication Guidelines

Heat Treatment

Rockstar 500 plates has obtained its mechanical properties by quenching and when required by subsequent tempering. The properties of as supply condition cannot be retained after exposure to service or preheating temperatures in excess of 200°C. Rockstar 500 is not intended for further heat treatment.

Cold Forming

| Bend radius is dependent on the direction of bending to rolling direction (t = Plate thickness) | Bend angle | Transverse | Parallel |
|---|------------|------------|----------|
| | 90° | 3xt | 4xt |

Welding & Cutting

| | |
|--------------------------------|---|
| Welding Method | All conventional welding methods like manual electric welding, submerged arc welding, inert gas welding |
| Preheating (Welding & Cutting) | Maximum 200°C for thickness greater than 15 mm |

Kindly reach the company representative for any further requirements and details.

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